



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,487	12/27/2000	Thomas J. Bingel	061607-1650	2844

7590 02/09/2005

Scott A. Horstemeyer
THOMAS, KAYDEN, HORSTEMEYER & RISLEY, L.L.P.
100 Galleria Parkway, N.W., Suite 1750
Atlanta, GA 30339-5948

EXAMINER

BRINEY III, WALTER F

ART UNIT	PAPER NUMBER
----------	--------------

2644

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/748,487

Applicant(s)

BINGEL ET AL.

Examiner

Walter F Briney III

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. **Claims 1-3, 5-8, and 12-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Iijima (US Patent 4,293,739).**

Claim 1 is limited to *a system for attenuating leakage signals in a communication system. Iijima discloses a plurality of amplifiers (figure 3, elements 30-31) coupled between a plurality of communication connections (figure 3, elements 01-02) and a communication device (figure 3, elements S1-S2). Iijima discloses an amplifier with a gain of -1, which means that the resistor values are chosen to have a near unity gain, which means that the output impedance is near-zero (column 3, lines 35-50). Iijima discloses using the amplifier to remove cross-talk between connections such that at least one leakage signal originating on a first communication connection of said plurality of communication connections (figure 5, element 1) cannot propagate from said first communication connection to a second communication connection of said plurality of communication connections (figure 5, element 2) (column 3, line 35-column 4, line 9).* Therefore, Iijima anticipates all limitations of the claim.

Claim 2 is limited to *the system of claim 1*, as covered by Iijima. Iijima discloses amplifiers configured as a negative feedback amplifiers (figure 5, element 15).

Therefore, Iijima anticipates all limitations of the claim.

Claim 3 is limited to *the system of claim 1*, as covered by Iijima. Iijima discloses a second plurality of amplifiers (figure 3, elements 32-33), said second plurality of amplifiers coupled between a second plurality of communication connections (figure 3, elements 3-4) and said communication device (figure 3, elements S3-S4). Therefore, Iijima discloses all limitations of the claim.

Claim 5 is limited to a method for shunting leakage signals in a communication system. Iijima discloses coupling at least one amplifier figure 3, element 30) between a first communication connection (figure 3, element 01) and a communication device (figure 3, element S1). Iijima discloses an amplifier with a gain of -1 (i.e. said amplifier having a nearly-zero impedance characteristic) (column 3, lines 35-50). Iijima discloses an amplifier with a near-zero gain, inherently it shunts one leakage signal originating on said first communication connection (figure 3, element 01) away from a second communication connection (figure 3, element 02) coupled to said communication device (figure 3, elements S1-S2) (column 3, line 35-column 4, line 9). Therefore, Iijima anticipates all limitations of the claim.

Claim 6 is essentially the same as claim 1, as covered by Iijima, with the further limitation of means for coupling said shunting means to a first communication connection and a communication device. Iijima discloses transformers (i.e. coupling means) (figure 3, near elements 01-05) that couple each communication connection

(figure 3, elements S1-S5) to the *communication device* (figure 3, elements S1-S5).

Therefore, Iijima anticipates all limitations of the claim.

Claim 7 is limited to *the system of claim 6*, as covered by Iijima. Iijima discloses an amplifier (i.e. *shunting means*) coupled serially between each *communication connection* (figure 3, elements 01-05) wherein. Therefore, Iijima anticipates all limitations of the claim.

Claim 8 is essentially the same as claim 1 and is rejected for the same reasons.

Claim 12 is limited to *the system of claim 1*, as covered by Iijima. Referring to figure 2 of Iijima, it is clear that a capacitive coupling exists between each wire (1 and 2), i.e. *communication connections*. The capacitive coupling presents a real and *physical* electronic interface between each line, which results in crosstalk (i.e. *wherein said first communication connection is physically coupled to said second communication connection*). Therefore, Iijima anticipates all limitations of the claim.

Claim 13 is limited to *the system of claim 1*, as covered by Iijima. Referring to figure 1 of Iijima, the capacitive coupling between two wires forms a serial chain between all proximate wires, thus creating a *physical* connection between each (i.e. *wherein said plurality of communication connections is physically coupled together*). Therefore, Iijima anticipates all limitations of the claim.

Claim 14 is limited to *the system of claim 1*, as covered by Iijima. It follows from the rejection of claim 13 that the serial chain is also coupled to each *communication device* (7) (i.e. *wherein said plurality of communication connections is physically*

coupled to said communication device). Therefore, Iijima anticipates all limitations of the claim.

Claims 15-17 are essentially the same as claims 12-14, respectively, and are rejected for the same reasons.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima.**

Claim 4 is limited to *the system of claim 1*, as covered by Iijima. Iijima discloses removing cross-talk in a switching office, but does not disclose whether the subscriber loops are digital subscriber loops. Therefore, Iijima anticipates all limitations of the claim with the exception *wherein at least one of said plurality of communication connections is a digital subscriber loop*. The examiner takes Official Notice of the fact that digital subscriber loops are well-known transmission mediums that connect between switching offices and subscriber terminals. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the cross-talk eliminating circuitry of Iijima with digital subscriber loops for the purpose of reducing cross-talk between loops, thus improving bandwidth.

3. **Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima in view of McHale (US Patent 6,088,430).**

Claim 9 is limited to *the system of claim 8*, as covered by Iijima. Iijima discloses transmitting signals onto each of its subscriber connections, but does not disclose any details as to how to drive multiple subscriber loops from a single central office. Therefore, Iijima anticipates all limitations of the claim with the exception *wherein said communication device time multiplexes said plurality of signals onto a single channel*. McHale teaches a DSL network (i.e. *communication device*) that transmits to plural subscribers (McHale, figure 1, elements 16), and includes a modem pool (McHale, figure 2, element 74), which corresponds to the connections of Iijima (Iijima, figure 3, elements S1-S5), which uses a DSLAM (McHale, figure 2, element 78) to connect subscriber loops (i.e. *plurality of channels*) to a packet-based network (McHale, figure 1, element 64) using *time multiplexing*. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the cross-talk eliminating circuitry of Iijima in the DSL network as taught by McHale for the purpose of reducing noise between subscriber loops, and thus increasing bandwidth.

Claim 10 is limited to *the system of claim 8*, as covered by Iijima. Iijima discloses transmitting signals onto each of its subscriber connections, but does not disclose any details as to how to drive multiple subscriber loops from a single central office. Therefore, Iijima anticipates all limitations of the claim with the exception *wherein said communication device frequency multiplexes said plurality of signals onto a plurality of channels*. McHale teaches a DSL network (i.e. *communication device*) that transmits to plural subscribers (McHale, figure 1, elements 16), and includes a modem

pool (McHale, figure 2, element 74), which corresponds to the connections of Iijima (Iijima, figure 3, elements S1-S5), which uses a DSLAM (McHale, figure 2, element 78) to connect subscriber loops (i.e. *plurality of channels*) to a packet-based network (McHale, figure 1, element 64) using *time multiplexing*. Each DSL signal is frequency multiplexed with a POTS signal onto each subscriber loop (i.e. *plurality of channels*). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the cross-talk eliminating circuitry of Iijima in the DSL network as taught by McHale for the purpose of reducing noise between subscriber loops, and thus increasing bandwidth.

Claim 11 is limited to *the system of claim 8*, as covered by Iijima. Iijima discloses transmitting signals onto each of its subscriber connections, but does not disclose any details as to how to drive multiple subscriber loops from a single central office. Therefore, Iijima anticipates all limitations of the claim with the exception *wherein said communication device is a signal multiplexing communication device*. McHale teaches a DSL network (i.e. *communication device*) that transmits to plural subscribers (McHale, figure 1, elements 16), and includes a modem pool (McHale, figure 2, element 74), which corresponds to the connections of Iijima (Iijima, figure 3, elements S1-S5), which uses a DSLAM (McHale, figure 2, element 78) to connect subscriber loops (i.e. *plurality of channels*) to a packet-based network (McHale, figure 1, element 64) using *time multiplexing*. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the cross-talk eliminating circuitry of Iijima in the DSL

network as taught by McHale for the purpose of reducing noise between subscriber loops, and thus increasing bandwidth.

Response to Arguments

4. **Applicant's instant amendment to claims 1 and 8 has overcome the previous claim objections, which are hereby withdrawn.**
5. **Applicant's instant amendment to claims 9 and 10 has overcome the previous claim rejections under 35 U.S.C. 112 second paragraph, which are hereby withdrawn.**
6. **Applicant's arguments, filed 28 June 2004, with respect to claims 1-17 have been fully considered but they are not persuasive.**

With respect to **independent claims 1, 5, 6, and 8**, the applicant alleges on pages 10-12 that Iijima does not disclose, teach, or suggest a device for preventing leakage signals from propagating between a first and second communication connection; the examiner respectfully disagrees. In support of their position, the applicant has stated that there is no physical connection between circuits 1, 2, or 3 of figures 1 and 2 of Iijima. See page 11, second paragraph of the instant response. However, there is a capacitive coupling, diagrammed as elements 4, 5, and 6. The capacitive coupling does not constitute a metallic connection, but it is certainly physical, as it is a measurable and real quantity. It is by this connection that crosstalk propagates between circuits 1, 2, and 3.

In further support of their position, the applicant states that their definition of a leakage signal states, "when a plurality of communication connections are coupled to a common communication device, leakage signals associated with signals on one of the communication connections may propagate onto one or more of the other communication connections." See page 12, second paragraph of the instant response. It is quite clear that the capacitive coupling (4, 5, and 6) inherent between the diagrammed circuits, or communication connections (1, 2, and 3), provide a connection to a common communication device (7). It follows from above that the crosstalk signals discussed in the previous paragraph are analogous to the applicant's definition of leakage signals.

With respect to **dependent claims 2-4, 7, and 9-11**, the applicant has not provided any reasons outside of those treated above with respect to claims 1, 5, 6, and 8. Thus, the rejections of the above mentioned claims are maintained.

With respect to **new claims 12-17**, the previous section entitled *Claim Rejections* – 35 USC § 102 provides the detailed treatment of these claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter F Briney III whose telephone number is 703-305-0347. The examiner can normally be reached on M-F 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 703-305-4040. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 09/748,487

Page 11

Art Unit: 2644

WFB

1/31/05



SINH TRAN
SUPERVISORY PATENT EXAMINER